

# Work Order ID 51752

September 2, 2009 8:32:28 AM



Page 1

Item ID: D2580-1

Accept



Setup Start



Revision ID: D

Stop



Item Name: 205 Skidtube bent detail

Start Date: 9/02/09 Start Qty: 2.00



Cust Item ID:

Required Date: 9/04/09 Req'd Qty: 2.00

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

Draw Nbr

Revision Nbr

D2580

Rev D

100

0.00



HandFinish

Memo

0.00

Hand Finishing

1- Inspect mat'l D2500-1-190 for damage.

2- Chemical Conversion Coat as per QSI 005 4.1

2 6 - AWM 9-1-2

101

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

DP 9-1-2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Process Plan:

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Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

110

0.00



Skidtubes

Memo

0.00

1-Drill pilot holes using drill jig DT 8149 (Do not use cutting fluid)

2-Open holes to 0.500" as per Dwg D2580 without cutting fluid

3-Deburr and blow out all chips from inside of tube

4-Bond web in place per QSI 015.

A/R Sikaflex-291 batch: 112391

Sikaflex expire date: 10-02-01

Start time: 1:00 bond for 12hrs

2 Ø - AWMF-9-2

130

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

9-9-10

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# Work Order ID 51752

September 2, 2009 8:32:29 AM

Page 3

Item ID: D2580-1

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Start Date: 9/02/09 Start Qty: 2.00

Cust Item ID:

Required Date: 9/04/09 Req'd Qty: 2.00

Customer:

Reference:

Run Start

Approvals: Process Plan: Date:

Tooling: Date:

Stop

QC: Date:

SPC (Y/N): Date:

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

140

Identify as per dwg & Stock Location: L-G.

0.00



Packaging

Memo

0.00

Packaging

150

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

2 ~~9~~ - AWM 9-9-10

09/09/11 ~~9~~

MF 09-09-10

W/O:		WORK ORDER CHANGES					
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# Picklist Print

Page 1

September 2, 2009 8:32:27 AM

Work Order ID: 51752

Parent Item: D2580-1RevD

Parent Item Name: 205 Skidtube bent detail

Comments:

Start Date: 9/02/09

Required Date: 9/04/09

Start Qty: 2.00

Required Qty: 2.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D2500-1-190RevU/R		Manufactured	No			100	Each	0.0000	2.0000			
Ext'n -1' Beam Tube 4"												
D2596RevD		Manufactured	No			110	Each	20.0000	2.0000			
Web, 205 Skidtube												

B-50166 AWM 7-2-09 (12) X

(2) 9-9-2 - AWM X

## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

LG

51528

20

20

AWM 9-7-2 51528 (12) X

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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**NOTE:** Date & initial all entries



**DART**

DESIGN #	DRAWN BY RH	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
CHECKED #	APPROVED #	DRAWING NO. D2580	REV. D SHEET 1 OF 3
DATE 07.02.27		TITLE 205 SKIDTUBE ASSEMBLY	SCALE NTS
A	96.09.16	NEW ISSUE	
B	96.12.02	AS MANUFACTURED	
C	98.08.26	REDRAWN, INCLUDED DEO 9094/9097	
D	07.02.27	CHANGE TO SS WEARPLATES AND GASKETS, INCLUDE DEO 9124/9183	

**RELEASED**  
07 06 28 #

QTY -041	QTY -045	Part Number	Description
X		D2580-041	SKIDTUBE ASSEMBLY
	X	D2580-045	SKIDTUBE ASSEMBLY
1	1	D2500-1-190	EXTRUSION
1	1	D2576-3	STEP
20	24	D2579	CROSS BOLT SPACER
16	16	D2594-1	PLUG
16	16	D2594-3	O-RING
1	1	D2596	205 WEB
1	1	D2855	AFT CAP
1	1	D3564-5	WEARSHOE
1	1	D3564-9	WEARSHOE
1	1	D3564-11	WEARSHOE
1	1	D3564-13	WEARSHOE
2	2	D3566-1	GASKET
1	1	D3566-5	GASKET
1	1	D3566-13	GASKET
50	50	ALS7-1032-130 or AKS7-1032-130 or AKS4-1032-130 or AELS-1032-130	INSERT
50	50	AN3C4A	BOLT
2	2	AN3-5A	BOLT
50	50	AN960C10L	WASHER
2	2	AN960JD10L	WASHER

c/o  
51752**GENERAL NOTES:**

- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 2) ALL DIMENSIONS ARE IN INCHES
- 3) INSERT D2596 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP.
- 4) BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ENDING WITH A MINIMUM RADIUS OF 30. A MAXIMUM REDUCTION OF 0.200 IN DIAMETER IS ALLOWABLE IN THE BENT PORTION OF THE TUBE.
- 5) USE DART DRILL TEMPLATE TD2577-205 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARSHOE INSERTS. INSTALL ALS7-1032-130 PER SECTION D-D (50 PLACES) AFTER FINISH. INSTALL AN3C4A BOLTS AND AN960C10L WASHERS WITH SIKAFLEX-241/-291.
- 6) WELDING TO BE DONE PER DART QSI 004.
- 7) FINISH:  
SEE NOTES ON  
PAGE 2 FOR D2580-041 AND  
PAGE 3 FOR D2580-045
- 8) INSERT D2594-1 PLUG C/W D2594-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (16 PLACES).

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

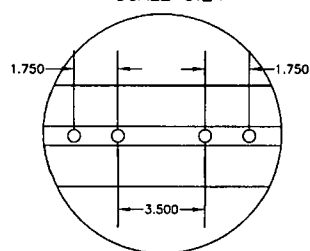
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Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

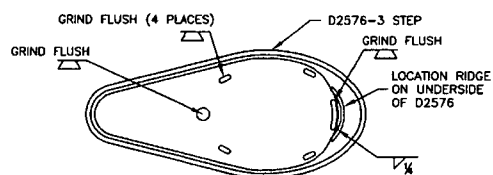
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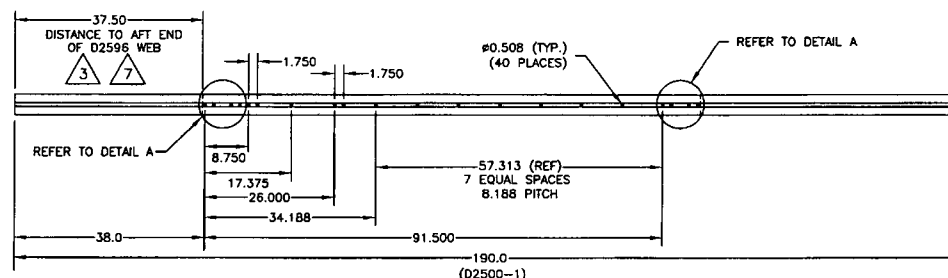
**DETAIL A**  
SCALE 5:24



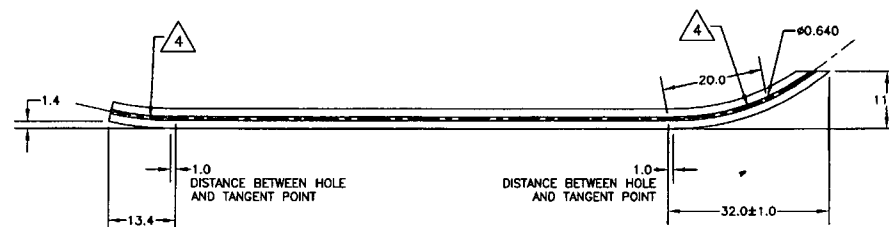
**DETAIL B**  
SCALE 5:24



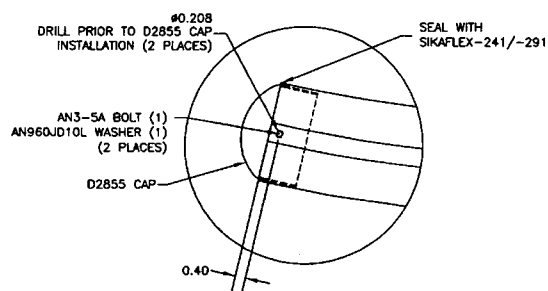
**D2580-1 DRILLING DETAIL**



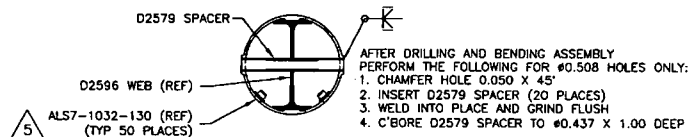
**D2580-1 BENDING AND CUTTING DETAIL**



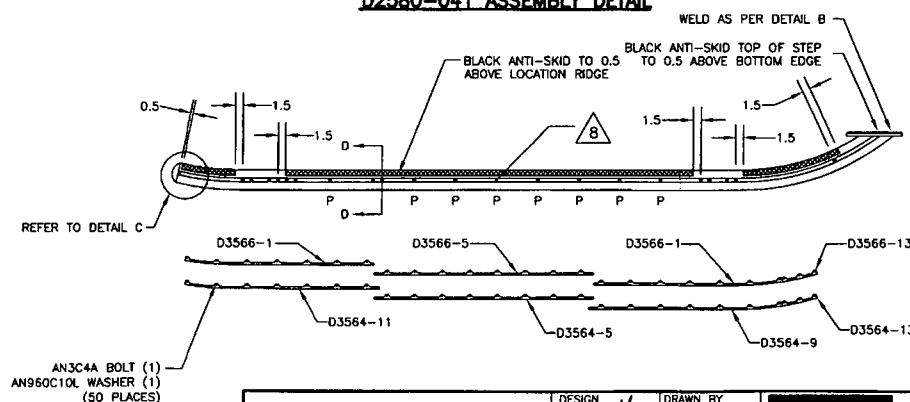
**DETAIL C**  
SCALE 5:24



**SECTION D-D**  
SCALE 5:24



**D2580-041 ASSEMBLY DETAIL**



**D2580-041 NOTES**

- i) FINISH: ACID ETCH, ALODINE PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB  
POWDER COAT ASSEMBLY GLOSS WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3  
BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4

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DESIGN	DRAWN BY	<b>DART</b>	DART AEROSPACE LTD.
CHECKED	APPROVED	DRAWING NO.	HAWKESBURY, ONTARIO, CANADA
DATE	TITLE	D2580	REV. 0
07.02.27	205 SKIDTUBE ASSEMBLY	SCALE	SHEET 2 OF 3
			1:24

51752

W/O:		WORK ORDER CHANGES					
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RELEASED  
07 Dec 28

Diagram illustrating the grinding locations for the D2576-3 step. The diagram shows a cross-section of the step with the following labels:

- GRIND FLUSH (4 PLACES)
- GRIND FLUSH
- D2576-3 STEP
- LOCATION RIDGE ON UNDERSIDE OF D2576

Technical drawing of a circular base plate with the following specifications:

- DRILL PRIOR TO D2855 CAP INSTALLATION (2 PLACES)**: Points to two small circular holes.
- #0.208**: Dimension for the diameter of the two small holes.
- AN3-5A BOLT (1)** and **AN96QJDIOL WASHER (1) (2 PLACES)**: Points to two larger circular holes.
- D2855 CAP**: Points to a rectangular area on the plate.
- SEAL WITH SIKAFLEX-241/-291**: Points to the outer edge of the plate.
- SEE NOTE ii)**: Points to a specific feature on the plate.
- 0.40**: Dimension for the thickness of the plate.

5

D2579 SPACER

D2596 WEB (REF)

ALST-1032-130 (REF)  
(TYP. 50 PLACES)

AFTER DRILLING AND BENDING ASSEMBLY  
PERFORM THE FOLLOWING FOR #0.508 HOLES ONLY:

1. CHAMFER HOLE 0.050 X 45°
2. INSERT D2579 SPACER (20 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. C'BORE D2579 SPACER TO #0.437 X 1.00 DEEP

i) FINISH: ACID ETCH, ALODINE PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB POWDER COAT ENTIRE ASSEMBLY GREEN (REF. 4.3.5.8) PER DART QSI 005 4.3 BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4

ii) IT IS ACCEPTABLE TO GRIND A RELIEF IN THE D2855 AFT CAP TO PREVENT INTERFERENCE WITH THE SPACER AT THIS LOCATION

[illegible]

(MAKE FROM D2380-1 DRILLING DETAIL)

Dimensions shown:

- 5.985
- 5.338 (REF)
- 51.340
- 3.630 (REF)
- 39.580
- 5.915
- $\phi .508$  (8 PLACES)
- 20.0
- $\phi .640$
- 1.4
- 1.0 DISTANCE BETWEEN HOLE AND TANGENT POINT
- 13.4
- 1.0 DISTANCE BETWEEN HOLE AND TANGENT POINT
- 32.0 $\pm$ 1.0

Note: A triangle symbol with the number 4 is used as a reference marker.

**D3560-04S ASSEMBLY DETAIL**

WELD AS PER DETAIL F

BLACK ANTI-SKID TO 0.5 ABOVE LOCATION RIDGE

NO C'BORE NO PLUG

8

REFER TO DETAIL G

0.5

1.5

H

P P P P P P P

BLACK ANTI-SKID TOP OF STEP TO 0.5 ABOVE BOTTOM EDGE

1.5

1.5

1.5

NO C'BORE NO PLUG

D3566-1

D3566-5

D3566-1

D3566-13

D3564-11

D3564-5

D3564-9

D3564-13

AN3C4A BOLT (1)

AN96OC10L WASHER (1)

(50 PLACES)

DESIGN	DRAWN BY
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07.02.27

205 SKIDTUBE ASSEMBLY	1:24
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